

Request for Economic Stimulus Funds

P20 Knowledge Management System Concept Proposal

Submitters:

Technology and Networking Work Group – Al Lind, Chair

P20 Knowledge Management System Writing Team - Heidi Hiemstra, Council on Postsecondary Education, Team Captain; Phil Rogers, Education Professional Standards Board; Ann Riggs and Bob McWilliams, Education & Workforce Development Cabinet; David Couch, Larry Stinson and Robert Hackworth, Kentucky Department of Education; Tim Ferguson and Kevin Kirby, Northern Kentucky University; Mel Letteer, Kentucky Higher Education Assistance Authority; Steve Clements, Asbury College

Funding source: ARRA competitive grant funding for Statewide Longitudinal Data Systems through the Institute for Education Statistics, U.S. Department of Education, details here: Grants.gov

Project Title: Kentucky P-20 Knowledge Management System

Project Partners (Known or Anticipated):

KDE, CPE, EPSB, KHEAA, Workforce Investment, possibly Transportation, Finance and Health and Human Services Cabinets

Project Background & Purpose (Justification for Project):

The proposed initiative will expand on the Statewide Longitudinal Data System (SLDS) grant received in March 2009 by the Kentucky Department of Education (KDE) in collaboration with the Council on Postsecondary Education (CPE) and the Education Professional Standards Board (EPSB) to build a broader, better utilized, and more accessible view of the P-20 educational landscape in Kentucky. Kentucky policy makers have identified P-20 data systems as essential to the planning, conduct and evaluation of education at all levels. An expanded P-20 Knowledge Management System will enable the use of longitudinal data to develop value-added models for an array of diagnostic and evaluative purposes. Topics of interest in the state include educational leadership; improved teaching through teacher retention and strengthened teacher preparation and in-service training; ensuring that students are prepared for the workforce and for college, predictors of student retention and success at all levels; and the workplace experiences and performance of former high school and college students.

Kentucky approaches education issues with a high degree of collaboration across the P-20 spectrum. The state's education agencies work together on a wide variety of cross-agency initiatives such as the P-16 Council, teacher preparation and developmental education. In some states, P-20 systems are being

built out of a sense of accountability outside of the education communities. Governors and legislatures are demanding more data and information, so these systems are being created without sufficient input from the K-12 and postsecondary sectors. Kentucky's P-20 data system will reflect the interests of all educational agencies and provide state and local policy makers with the information necessary to improve the system. Kentucky is already committed to build and maintain a P-20 data warehouse through a cross-agency governance structure. Additional funding will enable the aggressive, planned, evolutionary growth of this warehouse into a knowledge management system.

Project Description (General Goals & Implementation Strategies):

Kentucky will be building a warehouse of de-identified student and institutional-level data that is situated outside existing agencies. We propose expanding this warehouse to a P-20 Knowledge Management System (KMS) by adding substantially to the data in the warehouse and by dramatically improving the utility of the warehouse through enhanced analytics and access.

Because workforce development is a priority of the grant, adding information on labor and workforce needs will be a priority. We also propose to add data from Kentucky's fourth educational agency, the Kentucky Higher Education Assistance Authority (KHEAA), which administers the state's financial aid programs. We would also like to explore the inclusion of records from other state agencies, such as the use of drivers' license, tax and unemployment insurance data to identify the success and migration patterns of graduates, or human services data about children and families such as birth certificates, immunization records, transfer payments, and other socio-economic factors. Projects using these data are currently conducted on an ad-hoc basis, and moving these projects to the KMS would require the identification and resolution of issues related to multi-agency data sharing in compliance with FERPA, CIPA, HIPAA, and other applicable laws. An expanded KMS could also include historical data to expand the tracking of education trends over time, review the data needs of the education agencies and expand source data accordingly, and incorporate finance and funding information.

This grant would also make P-20 data more useful to educational practitioners and policy makers through advanced analytics and increased access. A significant component would be the purchase of advanced analytical tools to broaden agency analysts' ability to answer pertinent research questions. The KMS design process would include the development of best practices for implementing the sophisticated statistical models needed to make sense of longitudinal data while keeping reports comprehensible and useful to practitioners and policy makers. Educational researchers in the academic community would contribute important insights to the design process and could maximize the utility of the KMS by conducting pertinent analysis for practitioners and policy makers. To expand access and transparency, the KMS could also develop a public viewing component that presents a defined set of knowledge to stakeholders across the state, such as parents, school board members and local government authorities. Public access would require careful planning to present meaningful information about education in easily understood formats, as well as advanced analytical software to enable individuals to

query the data on the web using natural language without compromising the security of the KMS. More extensive user training and/or help tools would also be required to support public access.

The KMS would follow the same three-stage development process as the current SLDS grant, beginning with a needs analysis of desired outcomes, followed by implementation and reporting phases.

Kentucky's financial commitment to the sustainability of the KMS will be essential to the success of the project and must be ascertained. Member agencies will consider a joint budget request for the on-going maintenance of the KMS, but all efforts permissible under the grant opportunity will be made to fund on-going expenses through the grant, such as pre-paying software licensing fees a few years into the future.

Project Team (Project Manager(s), Content Experts, Instructional Designers, etc.):

This project would be governed and staffed through the structure put in place for the current SLDS grant. The governance body of agency heads that sets the overall agenda and negotiates turf issues would be expanded to include the Commissioner of the Department for Workforce Investment and the Executive Director of KHEAA. The Project Leads within the agencies who set the detailed work plan and provide expertise on their agency's data and reporting needs would be expanded to these two additional agencies as well. Additional agency technical staff would need to be hired to work on the project. The project manager is funded for the next three years through the current SLDS project, and his or her duties would expand to encompass the new pieces of the KMS. The database itself will be designed and implemented by contract staff, which will need to be expanded under this grant.

Project Budget & Amount of Economic Stimulus Funds Requested:

Categories	Cost
Advanced analytic software -- purchase	\$2,000,000
Advanced analytic software -- annual licensing prepaid 4 years @ \$500K/yr	\$2,000,000
Competitive policy research grants using KMS data -- payable over 5 years	\$1,000,000
Additional technical staff for agencies added to the database -- 3 @ \$90K/yr for three years	\$810,000
Additional contract database/business analyst positions -- 3 @ \$120K each for two years.	\$720,000
High-security hardware for public use component	\$250,000
Maintenance -- 5 years at @ \$65K/yr	\$325,000
Develop virtual help/training for public use component	\$50,000
Travel	\$6,000
Other	\$5,000

Total

\$7,166,000